AD-A039 386   NATIONAL MILITARY COMMAND SYSTEM SUPPORT CENTER WASH--ETC F/G 15/6
               THE NMCSSC QUICK-REACTING GENERAL WAR GAMING SYSTEM (QUICK) PRO--ETC(U)
               DEC 76

UNCLASSIFIED   NMCSSC-CSM-MM-9-74-V3-2   NL

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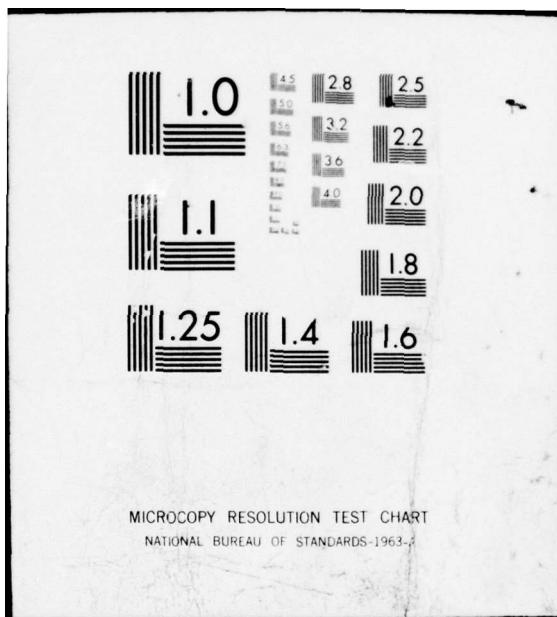
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MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A

DEFENSE COMMUNICATIONS AGENCY

COMMAND AND CONTROL
TECHNICAL CENTER

WASHINGTON, D. C. 20301

IN REPLY
REFER TO: C314

11   6 December 1976

TO: RECIPIENTS

SUBJECT: Change 2 to Program Maintenance Manual CSM MM 9-74,
           Volume III, Weapon Allocation Subsystem

1. Insert the enclosed change pages and destroy the replaced pages
according to applicable security regulations.

2. A list of Effective Pages to verify the accuracy of this manual
is enclosed. This list should be inserted before the title page.

3. When this change has been posted, make an entry in the Record of
Changes.

FOR THE DIRECTOR

26 Enclosures
Change 2 pages

J. DOUGLAS POTTER
Asst to the Director
for Administration

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AMERICAN REVOLUTION BICENTENNIAL 1776-1976

This list is used to verify the accuracy of CSM MM 9-74 Volume III after change 2 pages have been inserted. Original pages are indicated by the letter O, change 1 pages by the numeral 1, and change 2 pages by the numeral 2.

Page No.	Change No.	Page No.	Change No.
Front Cover	1	239.1-239.2	1
Title Page	1	240-243	1
ii-iii	1	244-246	0
iv-v	0	247	1
vi-vii	1	248-255	0
viii	0	256-257	1
ix-x	1	258	0
xi-xii	0	259	1
xiii	1	260-263	0
xiv	0	264	1
1-8	0	265-272	0
9	2	273-274	1
10-31	0	275-290	0
32	2	291	1
33-106	0	292-300	0
107	2	301-302	1
108-136	0	303-305	0
137-138	2	306-307	1
139-150	0	308-309	0
151	1	310	1
152-155	0	311-316	0
156	1	317-318	1
157-187	0	318.1-318.2	1
188-189	1	319-320	1
190-201	0	321-324	0
202	1	325	1
203-206	0	326-334	0
207	1	335-336	1
208-212	0	337	0
213	1	338-340	1
214	0	341-345	0
215	1	346-351	1
215.1-215.2	1	351.1-351.2	1
216-217	1	352	0
218-219	0	353	1
220	1	354	0
221-235	0	355-356	1
236-239	1	357-358	0

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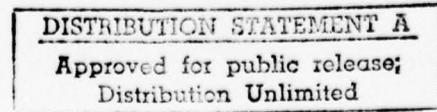
Page No.	Change No.
359-360	1
361	0
362-364	1
364.1-364.2	1
365-368	1
368.1-368.22	1
369-370	0
371	1
372	0
373	1
373.1-373.2	1
374-375	1
376-377	0
378-384	1
384.1-384.2	1
385-386	0
387	1
387.1-387.2	1
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393-394	2
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466-467	0
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469-490	0
491	1
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493-494	1

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DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited
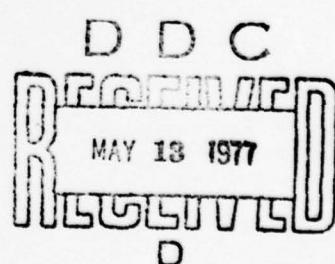
Table 1. TGTFILE Format (Target Data Block**) (Part 1 of 2)

ARRAY OR VARIABLE*	DESCRIPTION
TGTNAMZ	Target name
INDEXNZ	Target index number
DESIGZ	Target designator code
TASKZ	Target task code and country owner code
CNTRYLCZ	Target country location code plus vulnerability (first two characters define country location; last four vulnerability)
FLAGZ	Target flag code
TGTMULZ	Target multiplicity
TGTLAZ	Target latitude
TGTLONZ	Target longitude
TGTRAZ	Target radius (nautical miles)
VTZ	Original target value
MZ	Number of hardness components
HZ(2)	Lethal radius (1MT ground burst) by hardness component (nautical miles)
HAZ(2)	Lethal radius (1MT air burst) by hardness component (nautical miles)
VOZ(2)	Value by hardness component
IDHOBZ	Preferred height of burst on this target
NKZ	Number of time components
FVAZ(5)	Time component value by time component
TAZ(5)	Time component time by time component
IHCLASZ	Target class name

* Parenthetical values indicate array dimensions. All other elements are single word variables.

** There is one block of this format for each target. The blocks are ordered as shuffled by program PLANSET.

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Table 1. (Part 2 of 2)

ARRAY OR VARIABLE*	DESCRIPTION
ICLASSZ	Target class number
IHTYPZ	Target type name (for complex targets, this is replaced by the number of components in the complex).
TARDEZ	Local bomber defense level
MISDEZ	Number of terminal ballistic missile defense interceptors
MINKILZ	Minimum kill probability required
MAXKILZ	Maximum kill probability desired
MAXCOSZ	Maximum (weapon cost/target value) acceptable to get MINKILZ
INDYPEZ	Depenetration corridor index
DISTDFZ	Distance target to end of depenetration corridor (nautical miles)
DISTDGZ	Distance target to recovery base (nautical miles)
DISTCDZ(30)	Distance corridor origin to target by penetration corridor (nautical miles)
ATTRCDZ(30)	Attrition corridor origin to target by penetration corridor
NFIXEZ	Number of fixed assignments for this target
INFIX(NFIXES X 2)	Fixed assignment information for each assignment. First word is group number (first three characters) and arrival time (last five characters). Second word is salvo number (Non zero only for salvoed missiles).

* Parenthetical values indicate array dimensions. All other elements are single word variables.

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2.5.16 Subroutine RDPRCMP: This subroutine reads the user-input parameter cards for the data precomputation module.

2.5.17 Subroutine PRINTDAT: This subroutine controls the operation of all optional prints available in the data precomputation module. They include the following:

a. Listing of routing data

b. Tape dump of input routing data

c. Listing of weapon groups for each corridor

d. Tape dump of input weapon data

e. Listing of target data

f. Tape dump of input target data

g. Modified target data and fixed weapon assignments.

2.6 Common Block Definition

2.6.1 External Common Blocks. The external common blocks used by program PREPALOC in processing input/output (I/O) files are shown in table 4.

2.6.2 Input from Files. TINFILE and WINFILE: Almost all information stored from these input files is read into common block /INPSTOR/ which is used as an input storage buffer. For the value changing options this block is redefined to provide for more convenient input/output.

2.6.3 Output Data for TGTFILE. Block /INPSTOR/ is used for output to the TGTFILE. The fixed assignment data is added by reusing this block after the initial 95 words are output for each target.

2.6.4 Internal Common Blocks. In addition to the common blocks associated with I/O operations, the common blocks described in table 5 are used internally by program PREPALOC.

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Table 4. Program PREPALOC External Common Blocks (Part 1 of 9)

INPUT FROM TINFILE AND WINFILE

BLOCK	VARIABLE OR ARRAY*	DESCRIPTION
INPSTOR (Subroutines PREPALOC, ROUTING, WEAPPREP, TGTPREP, PRINTDAT)	BLOCK(1600)	Temporary storage area. (Also called NLOCK)
INPSTOR (Subroutines RDPRCMP, BASWRIT, FIXWEAP, MAKECHG, NORMALZ)	TGTNAMZ	Target name
	INDEXNZ	Target index number
	DESIGZ	Target designator code
	TASKZ	Target task code and country owner
	CNTRYLCZ	Target country location code plus vulnerability
	FLAGZ	Target flag code
	TGTMULZ	Target multiplicity
	TGTLAZ	Target latitude
	TGTLONZ	Target longitude
	TGTRAZ	Target radius (nautical miles)
	VTZ	Original target value
	MZ	Number of hardness components
	HZ(2)	Lethal radius (1MT ground burst) by hardness component (nautical miles)
	HAZ(2)	Lethal radius (1MT air burst) by hardness component (nautical miles)
	VOZ(2)	Value by hardness component
	IDHOBZ	Preferred height of burst
	NKZ	Number of time components
	FVAZ(5)	Time component value by time component
	TAZ(5)	Time component time by time component
	IHCLASZ	Target class name

---

* Parenthetical values indicate array dimensions. All other elements are single word variables.

VARIABLE OR ARRAY	DESCRIPTION
TGTNAME	Hollerith target name
INDEXNO	Index number of target
DESIG	Target designator code
TASK	Target task code and country owner
CNTRYLOC	Target country location code plus vulnerability
FIAG	Target flag code
TGTMULT	Target multiplicity (original)
TGTLAT	Target latitude
TGTLONG	Target longitude
TGTRAD	Target radius
VTO	Original target value
M	Number of hardness components (≤ 2)
H(2)	Ground burst lethal radius of each component
HA(2)	Air burst lethal radius of each component
VO(2)	Original value of each component
IDHOB	Preferred height of burst
NK	Number of time periods (≤ 5)
FVAL(5)	Fraction value escaping in each period
TAU(5)	Time ending each period
IHCLASS	Hollerith target class name
ICLASS	Target class number
IHTYPE	Hollerith target-type name
TARDEF	Local bomber defense factor
INDYPEN	Depenetration corridor index
DISTDF	Distance from target to end of depenetration
DISTDG	Distance from target to recovery base

Table 7. (Part 2 of 2)

NBLN	$\left\{\begin{array}{l}\text{= number of terminal ballistic missile} \\ \quad\text{interceptors if a STALL allocation} \\ \text{= minus the number of interceptors if} \\ \quad\text{a DEFALOC allocation}\end{array}\right.$
CTMULT	Current target multiplicity
VT	Value remaining after allocation of weapons
TGTWT(3)	Target weighting values
PAYOFF	Payoff on this target (VTO-VT)
COST	Sum of Lagrange multipliers of all weapons allocated to target
PROFIT	PAYOFF - COST
DPROFIT	Difference in profit between passes
WRTEST	Test value for weight rates
IHEOT	End of information marker
NUMFIX	Number of weapons allocated by fixed assignment capability
ITGT	Target number
NUM*	Number of weapons assigned
IG(NUM)	Group number of assigned weapons
KORR(NUM)	Weapon penetration corridor
RVAL(NUM)	Relative value of weapon allocation
PEN(NUM)	Weapon penetration probability
TOARR(NUM)	Weapon time of arrival on target
ISAL(NUM)	Salvo number of missile (zero for non-salvoed missiles). For bombers; zero for gravity bomb, one for ASM

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* If there are no weapons assigned, NUM is equal to 0 and none of the remaining arrays are output on the file.

Table 11. (Part 5 of 7)

INPUT FROM TGTFILE

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
ALOCIN	TGTNAMZ	Target name
	INDEXNZ	Target index number
	DESIGZ	Target designator code
	TASKZ	Target task code and country owner
	CNTRYLCZ	Target country location code plus vulnerability
	FLAGZ	Target flag code
	TGTMULZ	Target multiplicity
	TGTLAZ	Target latitude
	TGTLONZ	Target longitude
	TGTRAZ	Target radius (nautical miles)
	VTZ	Original target value
	MZ	Number of hardness components
	HZ(2)	Ground burst lethal radius (1MT) by hardness component (nautical miles)
	HAZ(2)	Air burst lethal radius as above
	VOZ(2)	Value by hardness component
	IDHOBZ	Preferred height of burst
	NKZ	Number of time components
	FVAZ(5)	Time component value by time component
	TAZ(5)	Time component time by time component
	IHCLASZ	Target class name
	ICLASSZ	Target class number
	IHTYPZ	Target type name (for complex targets, this is replaced by the number of components in the complex)
	TARDEZ	Local bomber defense level
	MISDEZ	Number of terminal ballistic missile defense interceptors
	MINKILZ	Minimum kill probability required
	MAXKILZ	Maximum kill probability desired
	MAXCOSZ	Maximum (weapon cost/target value) acceptable to get MINKILZ
	INDYPEX	Depenetration corridor index
	DISTDFZ	Distance target to end of depenetration corridor (nautical miles)

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Table 11.   (Part 6 of 7)

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
ALOCIN (cont.)	DISTDGZ	Distance target to recovery base (nautical miles)
	DISTCD(30)	Distance corridor origin to target by penetration corridor (nautical miles)
	ATTRCD(30)	Attrition corridor origin to target by penetration corridor
	NFIXES	Number of fixed assignments for this target
	LTG	Length of common block /ALOCIN/

INPUT FROM CARDS

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
IRUNTYP	IRUNTYP	Program Constraint, Convergence, and Termination functions

OUTPUT ON ALOCTAR FILE

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
DYNAMIC	TGTNAME	Hollerith target name
	INDEXNO	Index number of target
	DESIG	Target designator code
	TASK	Target task code and country owner
	CNTRYLOC	Target country location code plus vulnerability
	FLAG	Target flag code
	TGTMULT	Target multiplicity (original)
	TGTLAT	Target latitude
	TGTLONG	Target longitude
	TGTRAD	Target radius
	VTO	Original target value
	M	Number of hardness components (≤ 2)
	H(2)	Hardness of each component
	HA(2)	Air burst lethal radius
	VO(2)	Original value of each component

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Table 19. (Part 2 of 3)

ASSOCIATED COMMON	LENGTH	VARIABLE OR ARRAY	DESCRIPTION
/C2/ (cont.)	NT	IDEPEN	Depenetration corridor index
	NT	DISTOUT	Distance from target to point of depenetration
	NT	DISTREC	Distance from target to recovery point
	NT	ATTRLOC	Local target defense potential
	NT	RVAL	Relative value of target
	NT	DELAT	Offset latitude for weapon delivery
	NT	DELONG	Offset longitude for weapon delivery
	$\frac{(NT-1)}{36} + 1$	IBFIX	Weapon fixed assignment indicator (logical array)
	$\frac{(NT-1)}{36} + 1$	IHOB	Height of burst indicator (logical array)
	NT	DESIG	Target designator code
	NT	TASK	Target task code and country owner
	NT	CNTRYLOC	Target country location code
	NT	FLAG	Target flag code

MISSILE RECORD FOR EACH MISSILE GROUP

ASSOCIATED COMMON	LENGTH	VARIABLE OR ARRAY	DESCRIPTION
/C2/	NT	INDEXNOM	Target index number
	NT	TGTLATM	Target latitude
	NT	TGTLONGM	Target longitude

Table 19.   (Part 3 of 3)

ASSOCIATED COMMON	LENGTH	VARIABLE OR ARRAY	DESCRIPTION
/C2/ (cont.)	NT	RVALM	Relative value of target
	NT	DELATM	Offset latitude for weapon delivery
	NT	DELONGM	Offset longitude for weapon delivery
	$\frac{(NT-1)}{36} + 1$	IBFIX	Weapon fixed assignment indicator (logical array)
	$\frac{(NT-1)}{36} + 1$	IHOB	Height of burst indicator (logical array)
	NT	DESIGM	Target designator code
	NT	TASKM	Target task and country owner codes
	NT	CNTRYLCM	Target country location code
	NT	FLAGM	Target flag code
	NT	ISALM	Salvo number for salvoed missiles

Table 20. (Part 2 of 4)

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
WGROUP	IREG(200)	Command and control region
	ITYPE(200)	Type index (LTYPE)
	SBL(200)	Probability of survival before launch
	YIELD(200)	Weapon yield (megatons)
	CEP(80)	CEP (nautical miles)
	REL(80)	Reliability
	CCREL(20)	Command and control reliability by command and control region
ASMT	IAMSM(200)	Index to ASM table for each group
	YLD(50)	Warhead yield from warhead table
	IWHDASM(20)	Index to warhead table for ASM warhead
	RELASM(20)	ASM reliability
	CEPASM(20)	Circular error probable for ASM delivery
TARGET*	TGTNAME	Target name
	INDEXNO	Target index number
	DESIG	Target designator code
	TASK	Target task and country owner codes
	CNTRYLOC	Target country location code and vulnerability
	FLAG	Target flag code
	TGTMULT	Target multiplicity
	TGTLAT	Target latitude
	TGTLONG	Target longitude
	TGTRAD	Target radius (nautical miles)
	VTO	Original target value
	M	Number of hardness components
	H(2)	Lethal radii by hardness component**
	FVALH1	Fraction of value of first hardness component
	NK	Number of time components
	FVAL(5)	Fraction of value escaping in each time period
	TAU(5)	Time ending each time component

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* TARGET is the 34-word record contained on the BASFILE for each complex target component.

** Ground burst radius in lower 18 bits; air burst radius in upper 18 bits in units of .0001 nautical miles.

Table 20. (Part 3 of 4)

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
TARGET (cont.)	IHCLASS	Target class name
	ICLASS	Target class number
	IHTYPE	Target type name
	TARGET(30)-TARGET(34)	Not used
MULTTGT*	NAME	Target name
	INDEX	Target index number
	DSIG	Target designator code
	TSK	Target task and country owner codes
	CNTRLC	Target country location code
	FLG	Target flag code
	TLAT	Target latitude
	TLONG	Target longitude
HOB*	LXISPEC(3)	Logical array set true for weapon type with specified HOB
	LXIWHOB(3)	Logical array containing user specified HOB by weapon type
	IHVULN(63)	Vulnerability numbers in target set
WTYPE**	IWTYPE(200)	Weapon type index for each group (equal to ITYPE in block /WGROUP/)

INPUT DATA FROM ALOCTAR

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
DYNAMIC	TGTNAME	Hollerith target name
	INDEXNO	Index number of target
	DESIG	Target designator code
	TASK	Target task and country owner codes
	CNTRYLOC	Target country location code and vulnerability
	FLAG	Target flag code
	TGTMULT	Target multiplicity (original)
	TGTLAT	Target latitude
	TGTLONG	Target longitude
	TGTRAD	Target radius
	VTO	Original target value
	M	Number of hardness components ($\leq$ 2)

* MULTTGT is the 8-word record contained on the BASFILE for each multiple target element.

** These blocks are also used in ALOCO2.

Table 20. (Part 4 of 4)

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
DYNAMIC (cont.)	H(2)	Ground burst lethal radius of each hardness component
	HA(2)	Air burst lethal radius for each hardness component
	VO(2)	Original value of each component
	IDHOB	Preferred height of burst
	NK	Number of time periods ($\leq$ 5)
	FVAL(5)	Fraction value escaping in each period
	TAU(5)	Time ending each period
	IHCLASS	Hollerith target class name
	ICLASSN	Target class number
	IHTYPE	Hollerith target type name
	TARDEF	Local bomber defense factor
	INDYPEN	Depenetration corridor index
	DISTDF	Distance from target to end of depenetration
	DISTDG	Distance from target to recovery base = number of terminal ballistic missile interceptors if a STALL allocation = minus the number of interceptors if a DEFALOC allocation
	CTMULT	Current target multiplicity
	VT	Value remaining after allocation of weapons
	TGTWT(3)	Target weighting values
	PAYOFF	Payoff on this target VTO-VT
	COST	Sum of Lagrange multipliers of all weapons allocated to target
	PROFIT	PAYOFF = COST
	DPROFIT	Difference in profit between passes
	WRTEST	Test value for weight rates
	IHEOT	End of information marker
	NUMFIX	Number of weapons allocated by fixed assignment capability
	ITGT	Target number
	NUM	Number of weapons assigned
	IG(30)	Group number of assigned weapons
	KORR(30)	Weapon penetration corridor
	VTD(30)	Relative value of weapon allocation
	PEN(30)	Weapon penetration probability
	TOARR(30)	Weapon time of arrival on target
	ISAL(30)	Salvo number (zero if bomber or nonsalvoed missile)

Table 21. Overlay ALOC01 Internal Common Blocks
(Part 1 of 4)

BLOCK	VARIABLE OR ARRAY*	DESCRIPTION
STRK		This common block primarily contains data moved from /DYNAMIC/ for further processing by PROCSIMP, PROCMULT, or PROCCOMP
	NAME	Hollerith target name
	INDEX	Target index number
	DSIG	Target designator code
	TSK	Target task and country owner codes
	CNTRLC	Target country location code and vulnerability
	FLG	Target flag code
	JHCLASS	Hollerith target class name
	JCLASS	Target class number
	JHTYPE	Hollerith target type name
	TLAT	Target latitude
	TLONG	Target longitude
	IATLOC	Logical bomber defense factor
	ITPREM	1 if complex target; 0 otherwise
	IDPN	Depenetration corridor index
	DISTF	Distance from target to end of depenetration
	DISTG	Distance from target to recovery base
	IGG(30)	Group number of assigned weapons
	KOR(30)	Weapon penetration corridor
	ISAL(30)	Salvo number (zero if bomber or nonsalvoed missiles)
	DLAT(30)	Latitude of target aim offset
	DLONG(30)	Longitude of target aim offset
	TOA(30)	Weapon time of arrival on target
	RELVAL(30)	RELVAL(I)=VTD(I)/PEN(I) from /DYNAMIC/ block
	PENN(I)	Weapon penetration probability
	MULL	Current target multiplicity if multiple target; zero otherwise
	ICOMP	IHTYPE from /DYNAMIC/ block if complex target; 1 if target is city (area target); 0 otherwise
	N	Number of weapons assigned
	ISTAPE	1 if BASFILE is used; 0 if program in debug mode
	IEOT	1 when last record read from

* Parenthetical values indicate array dimensions. All other elements are single word-variables.

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Table 21. (Part 2 of 4)

BLOCK	VARIABLE OR ARRAY*	DESCRIPTION
STRK (cont.)		ALOCTAR file; 0 otherwise
	NNFIX	Number of weapons allocated by fixed assignment capability
	IDHOBN	Preferred height of burst
INTERM	INTERMED	The logical unit number of the INTERMED file written by PROCSIMP and read by ALOCO2
CITY	ICITY	1 if the target is a city (or area target); 0 otherwise
ISKIPDGZ	ISKIPDGZ	Use indicator for DGZSEL. Normally it is 0. COMPRESS resets it to 1 if more than 20 calls to it are made to reduce the number of target elements for a complex target; DGZSEL is not used again for the target in this case.
STRKTGT (Also used by ALOCO2)		STRKTGT contains the variables output to the intermediate file by PROCSIMP. The variables are the same as those in STRK but pertain to only a single target/weapon combination.
	NAMEX	Target name
	INDEXX	Target index number
	DSIGX	Target designator code
	TSKX	Target task and country owner codes
	CNTRLCX	Target country location code and vulnerability
	FLGX	Target flag code
	JHCLASSX	Target class name
	JCLASSX	Target class number
	JHTYPEX	Target type name
	TLATX	Target latitude
	TLONGX	Target longitude
	ATLOCX	Local bomber defense factor
	TPREMX	1 if complex target; 0 otherwise
	IDPEN	Depenetration corridor index
	DOUT	Distance from target to depenetration
	DREC	Distance from target to recovery base

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Table 21. (Part 3 of 4)

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
STRKTGT (cont.)	IGX	Weapon group number
	KORRX	Weapon penetration corridor
	DLATX	Latitude of weapon delivery aim offset
	DLONGX	Longitude of weapon delivery aim offset
	TOAX	Weapon time of arrival on target
	RELVALX	VTD(I)/PEN(I) from /DYNAMIC/ for a given weapon I
	ISALX	Salvo number (zero if bomber or nonsalvoed missile)
	IIFIX	Fixed assignment flag
	IDHOBZ	Preferred height of burst
C1		As used by PROCCOMP, DGZSEL and associated subroutines
	XP(J), YO(J)	Coordinates of target element J
	VI(J)	Initial target element values
	VTOA(J,I)	Value of target element J immediately following arrival of weapon I
	S(J,I)	Survival probability of target element J releative to weapon I
	VEFF(J,I)	Effective value of target element J relative to weapon I
	X(I), Y(I)	Offset coordinates of weapon I
	PDEL(I)	Probability of delivery of weapon I
	ERDEL(I)	Error in delivery of weapon I
	YDSCL(I)	Scaled yield for weapon I
	VESC(J)	Intermediate computational value used in subroutine VAL in determination of total escaping target value
	RADL(J)	Lethal radius of target element J
	NI	Number of weapons for complex
	NJ	Number of target elements for complex
Local Variables	H(60,60)	As used by FINDMIN H matrix used during minimization procedure
	X1(60)	
	X2(60)	First, second, third and fourth
	X3(60)	trial aim point offset vectors
	X4(60)	
	SIG(60)	Offset aim point increment vector

Table 21.   (Part 4 of 4)

<u>BLOCK</u>	<u>VARIABLE OR ARRAY</u>	<u>DESCRIPTION</u>
Local	S(60)	Modified gradient direction vector
Variables	GO(60)	Initial gradient component vector
in FINDMIN	G(60)	Current gradient component vector
	DX(60)	Trial offset aim point increment vector
	Y(60)	Gradient component increcement vector
WAROUT	IWARFL	Logical unit number for the war gaming print output

Table 22. Overlay ALOCO2 Common
Blocks (Part 1 of 2)

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
FILES		See Table 20
INTERM		See Table 20
HOB	See Table	See Table 20
WTYPE		See Table 20
STRKTGT		See Table 21
C1		As used by ALOCO2 and STRKOUT
	ITD1(3000)	Storage for packed target data
	ITD2(3000)	Storage for packed target data
	IWD1(1130)	Storage for packed weapon data
	IWD2(1130)	Storage for packed weapon data
	IWD3(1130)	Storage for packed weapon data
C2		As used by ALOCO2
	ISEQ(1130)	Storage for subroutine ORDER
	FILLR(15453)	Used to set length of common for WRRDSTRK
C2		As used by WRRDSTRK
(formerly	NT	Number of strikes in corridor
RAIDSTRK)	JGROUP	Group index number
	JCORR	Corridor index number
	INDEXNO/INDEXNOM*	Target index numbers
	TGTLAT/TGTLATM*	Target latitudes
	TGTLONG/TGTLONGM*	Target longitudes
	TIMEPREM*	ASM use indicator
	IDEPEN*	Depenetration corridors
	DISTOUT*	Distances from targets to depenetration corridors
	DISTREC*	Distances from targets to recovery points
	ATTRLOC*	Local target defense potentials
	RVAL/RVALM*	Relative values of targets
	DELAT/DELATM*	Target offset latitudes
	DELONG/DELONGM*	Target offset longitudes
	DESIG/DESIGM*	Target designator codes
	TASK/TASKM*	Target task and country owner codes
	CNTRYLOC/CNTRYLCM*	Target country location codes
	FLAG/FLAGM*	Flag codes for targets
	LXIBFIX(32)	Fixed assignment indicators for targets

_____

* Length of each variable is 1030 for bombers and 1130 for missiles.

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Table 22. (Part 2 of 2)

BLOCK	VARIABLE OR ARRAY	DESCRIPTION
C2(formerly RAIDSTRK) (cont.)	INDEX	Array used by ORDER and REORDER for storage
		As used by ALOCO2 and WRRDSTRK
	ITD3(3000)	Storage for packed target data
	ITD4(3000)	Storage for packed target data
	ITD5(3000)	Storage for packed target data
	ITD6(3000)	Storage for packed target data
ALOC	INOWPNS	Total number of strikes on final sort file
	ITAPEW	Logical unit number of final sort file
DATA	IOUTDAT2	Number of words in filehandler snap on first RAIDSTRK write
	IOUTDAT3	Number of words in filehandler snap on second RAIDSTRK write
	JOUTDATP	Frequency of print of RAIDSTRK data, i.e., if JOUTDATP=3, prints every third record
KEYS		Keys used for packing data, using subroutines IPUT and IGET
RAID	NS	Number of strikes in corridor
	KOR	Corridor index number
	LOC	Index where this corridor begins, in sorted, packed weapon data
	IGRP	Group index number
SCRATCH	ISCRTCH	Logical unit number of scratch file used during sort of INTERMED file
STRKSUM	KGROUP	Group index number
	NTSTRK	Number of strikes in corridor
	NCORR	Internal index for corridor
	NSTRK(30)	Number of strikes by corridor
WAROUT	IWARFL	Logical unit number for the war gaming print output

5.6 Overlay ALOC01

PURPOSE: Extract data from ALOCTAR and compute any aiming offsets required by the plan.

ENTRY POINTS: ALOC01

FORMAL PARAMETERS: None

COMMON BLOCKS: ASMT, CITY, DYNAMIC, FILABEL, FILES, HOB, IFTPRNT, INTERM, ITP, MASTER, MYIDENT, MYLABEL, MULTTGT, NOPRINT, STRK, TARGET, TWORD, WAROUT, WGROUP, WTYPE

SUBROUTINES CALLED: ABORT, DEACTIV, DGZSEL, FILTGT, PROCCOMP, PROCMULT, PROCSIMP, RDARRAY, RDWORD, SETREAD, SETWRITE, SKIP, TERMTAPE, TIMEME, WRARRAY

CALLED BY: ALOCOUT

Method:

As indicated in figure 71 subroutines PROCSIMP, PROCMULT, and PROCCOMP are used to process simple, multiple, and complex target data (read from the ALOCTAR file), respectively. These routines extract the necessary data from an ALOCTAR input record and for each weapon strike cause a record to be written by PROCSIMP on the INTERMED file in a standard form.

The main function of PROCSIMP is to write this file which is the input for ALOC02. For simple targets, which need no special processing, PROCSIMP is called directly by ALOC01. PROCSIMP writes a 23-word data block for each weapon allocated to the target. This data block contains the necessary data relating to the target and the weapon group. Control then returns to ALOC01 where the next target block is read from ALOCTAR.

A multiple target represents two or more identical targets the geographic locations of which are in the same vicinity (and the index numbers of which, as game objects, are consecutive). These targets are represented as a "multiple target" in the input to the allocator so that program ALOC can save time by making only one assignment of weapons for all elements of the multiple target. This assignment then represents an identical allocation for each of the targets. However, for the detailed plans generated by POSTALOC, separate coordinates must be specified for each target, and specific missiles or aircraft must be assigned to each from weapon groups specified.

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1. ITD1


```
                                                    ITPREM
|      TASK      |    CNTRYOWN    |  0  | IATLOC  |    |
|------ 12 ------|------ 12 ------|- 3 -|-- 6 --|- 3 -|
```

2. ITD2


```
|    CNTRYLOC    |          KTLAT          |
|----- 12 ------|---------- 24 -----------|
```

3. ITD3


```
Spare   <-IDHOBZ->
  |   |  IDPEN  | FLAG |        KTLONG         |
| 1 |1|<-- 6 -->|< 4 >|--------- 24 ----------|
```

4. ITD4


```
|      KDOUT      |      KDREC      |
|------ 18 ------|------ 18 -------|
```

5. ITD5


```
|   0   |          DESIG          |
|<- 6 ->|--------- 30 ------------|
```

6. ITD6


```
| IVUL  |          INDEXNO          |
|<- 8 ->|--------- 28 -------------|
```
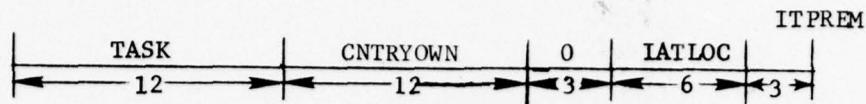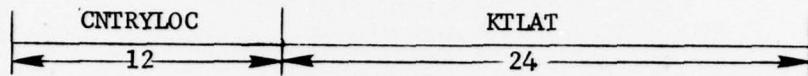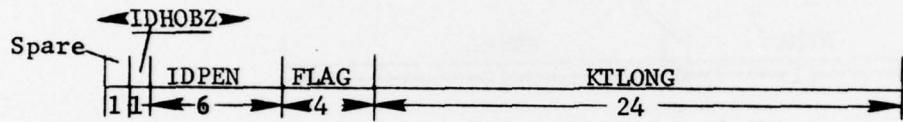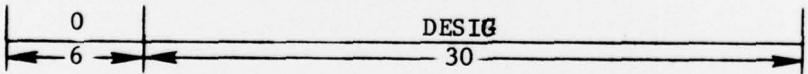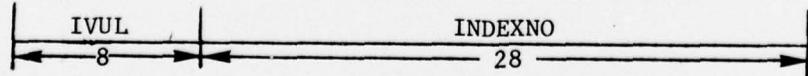
Figure 91.   Location of Packed Target
Values in Subroutine ALOCO2

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1. IWD1

```
         |←————————— KDLAT ——————————|←————————— KDLAT ——————————|
         |←——————————— 18 ———————————→|←——————————— 18 ———————————→|
```

2. IWD2

```
                                              IIFIX
                                                |
         |← Spare →|←————— KTOA ————→|← 1 →|←————— KRVAL ————→|
         |←—— 7 ——→|←———— 11 ———→|←——→|←———— 16 ————→|
```

3. IWD3

```
              IG2   Spare     Spare
         |0|    |0|   |          |         |         |
         |1| IG1 | | | |  KORR   |  IBETA  | ISALX |
         |←1→|← 7 →|←1→|←1→|←1→|← 5 →|←2→|←— 13 —→|← 5 →|
```
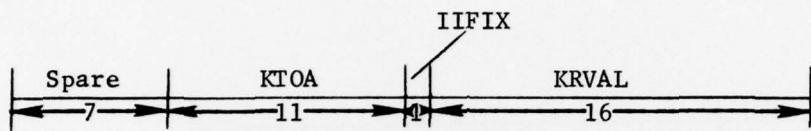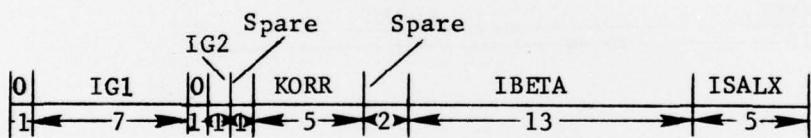
Figure 92. Location of Packed Weapon Values
In Subroutine ALOCO2

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```
                        ┌───────────┐
                        │   START   │
                        └─────┬─────┘
                              │
                    ┌─────────▼─────────┐
                    │   Call KEYMAKE    │
                    │   To Set Up Keys  │
                    │        For        │
                    │   Packing Data    │
                    └─────────┬─────────┘
                              │
               ┌──────────────▼─────────────┐
               │     Call SETREAD For       ├──────────┐
               │     The INTERMED File      │          │
               └──────────────┬─────────────┘   ┌──────▼──────────────┐
                              │                  │  Call SETWRITE For  │
                              │                  │  The TMPALOC File   │
               ┌──────────────▼─────────────┐    └──────┬──────────────┘
               │   Call RDARRAY To          │           │
               │   Input /FILES/ From       ◄───────────┘
               │   The INTERMED File        │
               └──────────────┬─────────────┘
                              │
                    ┌─────────▼─────────┐
                    │   Clear Target    │
                    │   Data Arrays     │
                    └─────────┬─────────┘
                              │                    ( B )
                    ┌─────────▼─────────┐
                    │   Clear Weapon    │
                    │   Data Arrays     │
                    └─────────┬─────────┘
                              │
                     ╱────────▼────────╲
            ( E )───►   Weapon Arrays    ──── Yes ──────────┐
                     ╲      Full?       ╱                   │
                      ╲───────┬────────╱                    │
                   11         │ No                          │
                    ┌─────────▼─────────┐                   │
    ┌──────────┐    │   Call RDARRAY    │                   │
    │ INTERMED │    │   To Read One     │                   │
    │ File 2   ├ ─ ─► STRKTGT Array From│                   │
    └──────────┘    │   INTERMED File   │                   │
                    └─────────┬─────────┘                   │
                              │                             │
                     ╱────────▼────────╲                    │
                    ╱   Last Record     ╲─── Yes ──────────►│
                    ╲    On File?       ╱                   │
                     ╲───────┬─────────╱                    │
                             │ No                        ( C )
                          ( D )
```
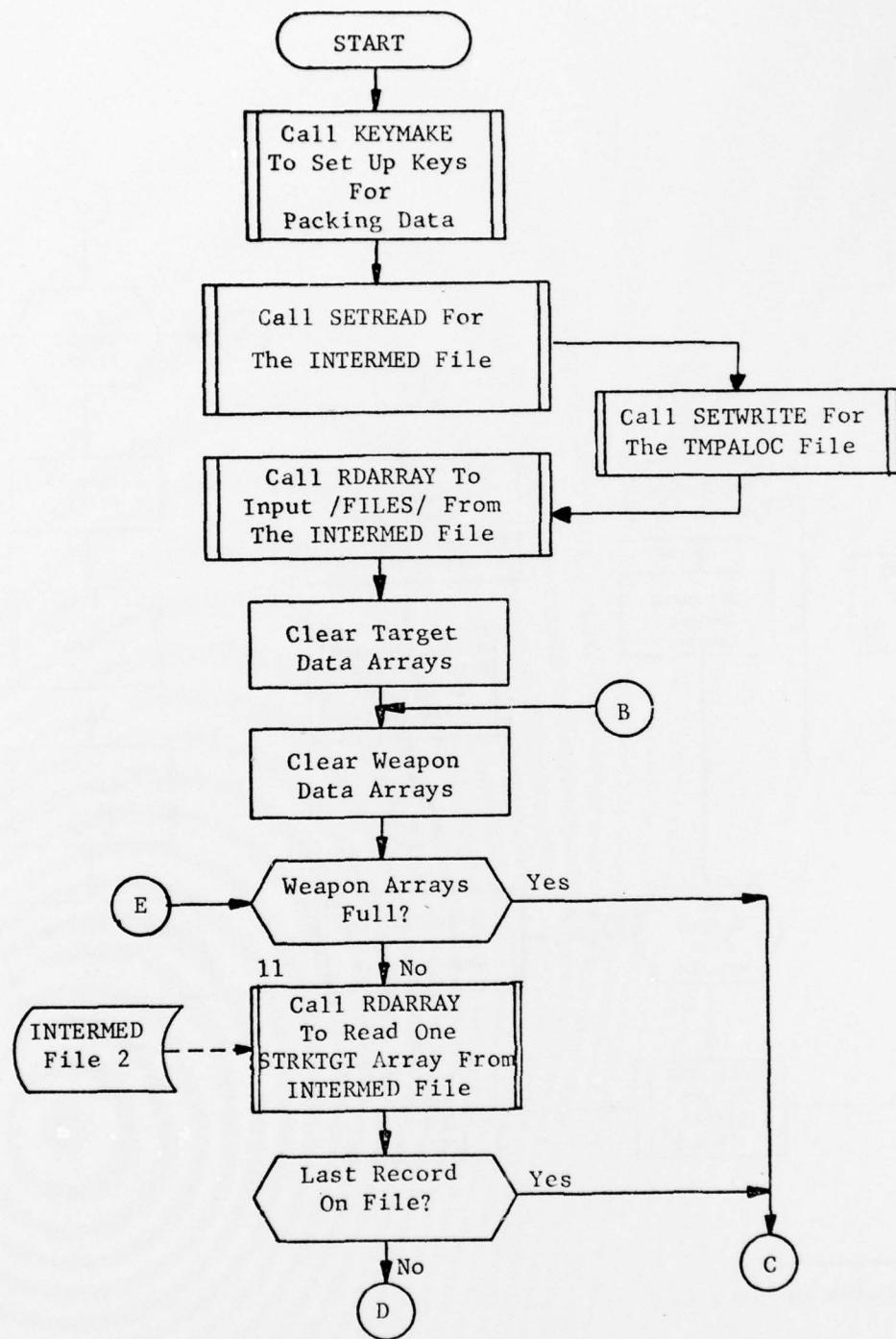
Figure 93.   Overlay ALOCO2
(part 1 of 4)

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Figure 93. (Part 2 of 4)

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*See Notes on part 4.